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EXAMINER	
THANGAVELU, KANDASAMY	
ART UNIT	**PAPER NUMBER**
2123	32

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/356,260	EIZENHOEFER ET AL.	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 July 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This communication is in response to the Applicants' Amendment mailed on February 3, 2004. Claims 1- 6, 9-12, 15 and 17 of the application were amended. Claims 1-19 of the application are pending. This office action is made non-final in response to request for continued examination.

Response to Amendments

2. Applicants' amendments, filed on February 3, 2004 have been considered. Claim rejections under 35 USC 112 First paragraph are withdrawn in response to the claim amendments made. Applicants' arguments with respect to claim rejections under 35 USC 102 (e) and 103 (a) are not persuasive, as indicated in Paragraph 10 below.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in-
>
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the

> treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
>
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1-2, 7-10 and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by **Balachandran et al. (BA)** (US Patent 5,881,105).

4.1 **BA** teaches a system and method for the non-sequential transmission of control signals within a speech transmission. Specifically, as per Claim 1, **BA** teaches a method for signaling of information in a frame based transmission system, whereat the signaling information contains information necessary for the operation of the transmission system (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by steps of

partitioning a bit sequence of signaling information and inserting different bits of the partitioned bit sequence of signaling information into a plurality of frames (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66); and

inserting the bit sequence of signaling information into another frame, wherein the bit sequence is related to the another frame (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization.

4.2 As per Claim 2, **BA** teaches the method of Claim 1, as discussed above. **BA** also teaches that the inserted bits of the partitioned bit sequence and the inserted bit sequence are synchronized by using the given synchronization of the frame based transmission system (Col 3, Lines 45-47 and Col 3, lines 60-66).

4.3 As per Claim 7, **BA** teaches the method of Claim 1, as discussed above. **BA** also teaches that the transmission system is a radio network system (Fig. 3).

4.4 As per Claim 8, **BA** teaches the method of Claim 7, as discussed above. **BA** also teaches that radio network system is a GSM system (Col 1, Lines 34-37 and Col 3, lines 34-37).

4.5 As per Claim 9, **BA** teaches a frame based transmission system for signaling of information, whereat the signaling information contains information necessary for the operation of the transmission system, having means for coding and decoding of data, means for handling, the coded data in frame format, and means for transmitting and receiving the frames (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by

means for partitioning a bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information inserted into and from a plurality of frames (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries

the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66); and

means for inserting and evaluating the bit sequence of signaling information (12;22) into and from another frame, wherein the bit sequence is related to the another frame (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization.

4.6 As per Claim 10, **BA** teaches the system of Claim 9, as discussed above. **BA** also teaches that means for synchronizing (10,11,14;20,21,24) are used to synchronize the inserted different bits of the partitioned bit sequence of signaling information and the inserted bit sequence of signaling information according to the given synchronization of the frame based transmission system (Col 3, Lines 45-47 and Col 3, lines 60-66).

4.7 As per Claim 13, **BA** teaches the system of Claim 9, as discussed above. **BA** also teaches that the transmission system is a radio network system (Fig. 3).

4.8 As per Claim 14, **BA** teaches the system of Claim 13, as discussed above. **BA** also teaches that radio network system is a GSM system (Col 1, Lines 34-37 and Col 3, lines 34-37).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 3-4 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Balachandran et al. (BA)** (US Patent 5,881,105), in view of **Le Strat et al. (LS)** (US Patent 6,134,220).

7.1 As per Claim 3, **BA** teaches a method for signaling of information in a frame based transmission system, whereat the signaling information contains information necessary for the operation of the transmission system (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by steps of:

partitioning a bit sequence of signaling information and inserting different bits of the partitioned bit sequence of signaling information into a plurality of frames (Col 4, Lines 3-11

and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66); and

inserting the bit sequence of signaling information into another frame, wherein the bit sequence is related to the another frame (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization.

BA does not expressly teach that the bit sequence of signaling information and the partitioned bit sequence of signaling information indicate a coding mode used for coding and decoding data in the transmission system. **LS** teaches that the bit sequence of signaling information and the partitioned bit sequence of signaling information indicate a coding mode used for coding and decoding data in the transmission system (Fig. 9; Col 7, Lines 40-42 and Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19); **LS** specifies that the coding mode is sent through FACCAH; since **BA** teaches that FACCH is sent in successive frames, the coding mode could be sent in one frame or partitioned and sent in successive frames. It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS** so the bit sequence of signaling information and the partitioned bit sequence of signaling information indicated a coding mode used for coding and decoding data in the transmission system, so the coding mode could be selected to reduce the resources used to

transmit a service and increase the number of calls per cell and to optimize the transmission quality.

7.2 As per Claim 4, **BA** teaches the method of Claim 1, as discussed above. **BA** does not teach that the inserted bit sequence of signaling information related to the another frame indicates a coding mode used for coding and decoding data in the transmission system. **LS** teaches that the inserted bit sequence of signaling information related to the another frame indicates a coding mode used for coding and decoding data in the transmission system (Fig. 9; Col 7, Lines 40-42 and Col 14, Lines 60-63), as the coding mode used depends on the quality of transmission required and the resources required (Col 4, Lines 41-50). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS,** so that the inserted bit sequence of signaling information related to the another frame indicates a coding mode used for coding and decoding data in the transmission system, as the coding mode used would depend on the quality of transmission required and the resources required.

BA does not teach that the partitioned bit sequence of signaling information inserted into a plurality of frames of the uplink is a quality measurement for the transmission. **LS** teaches that the partitioned bit sequence of signaling information inserted into a plurality of frames of the uplink is a quality measurement for the transmission (Col 7, Lines 44-48 and Col 14, Lines 60-63), as the quality information is used to select the coding mode to be used (Col 7, Lines 30-38). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS,** so the partitioned bit sequence of

signaling information inserted into a plurality of frames of the uplink is a quality measurement for the transmission, as the quality information would be used to select the coding mode to be used.

BA does not teach that the partitioned bit sequence of signaling information inserted into a plurality of frames of the downlink indicates a coding mode used for coding and decoding data in the transmission system. **LS** teaches that the partitioned bit sequence of signaling information inserted into a plurality of frames of the downlink indicates a coding mode used for coding and decoding data in the transmission system (Col 7, Lines 40-42 and Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to combine the method of **BA** with the method of **LS,** so the partitioned bit sequence of signaling information inserted into a plurality of frames of the downlink indicates a coding mode used for coding and decoding data in the transmission system, so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

7.3 As per Claim 15, **BA** teaches the system of Claim 9, as discussed above. **BA** does not teach that the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames and the bit sequence of signaling information provided by the means for inserting and evaluating

the bit sequence of signaling information (12;22) into and from another frame indicate coding modes used by the means for coding and decoding (10, 11; 20, 21). **LS** teaches that the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames and the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information (12;22) into and from another frame indicate coding modes used by the means for coding and decoding (10, 11; 20, 21) (Col 7, Lines 40-42 and Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the method of **LS** that included the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames and the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information (12;22) into and from another frame indicate coding modes used by the means for coding and decoding (10, 11; 20, 21), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

7.4 As per Claim 16, **BA** and **LS** teach the system of Claim 15, as discussed above. **BA** does not teach that the system is a fixed part of the radio network system. **LS** teaches that the system is a fixed part of the radio network system (Col 7, Lines 28-29), as the fixed part of the system transmits to the mobile station information representative of the coding mode (Col 7, Lines 40-42). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the signaling information in the fixed part of **LS**, as the fixed part of the system transmits to the mobile station information representative of the coding mode.

7.5 As per Claim 17, **BA** teaches the system of Claim 9, as discussed above. **BA** does not teach that the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames indicates a quality criterion for transmission. **LS** teaches that the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames indicates a quality criterion for transmission (Col 7, Lines 44-48 and Col 14, Lines 60-63), as the quality information is used to select the coding mode to be used (Col 7, Lines 33-38). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that included the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating

different bits of the partitioned bit sequence of information into and from a plurality of frames indicates a quality criterion for transmission, as the quality information would be used to select the coding mode to be used.

BA does not teach that the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information (12;22) into and from the another frame indicates coding modes used by the means for coding and decoding (10, 11; 20, 21). **LS** teaches that the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information (12;22) into and from the another frame indicates coding modes used by the means for coding and decoding (10, 11; 20, 21) (Col 14, Lines 60-63), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell (Col 3, Lines 13-16) and to optimize the transmission quality (Col 7, Lines 16-19). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that included the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information (12;22) into and from the another frame indicating coding modes used by the means for coding and decoding (10, 11; 20, 21), so the coding mode could be selected to reduce the resources used to transmit a service and increase the number of calls per cell and to optimize the transmission quality.

7.6 As per Claim 18, **BA** and **LS** teach the system of Claim 17, as discussed above. **BA** does not teach that the system is a mobile part of the radio network system. **LS** teaches that the system is a mobile part of the radio network system (Col 7, Line 43), as the mobile part of the

system transmits to the fixed part of the system, indication of transmission quality from base station to the mobile station (Col 7, Lines 44-48). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that included the signaling information indicating coding mode used for coding and decoding data and the quality measurement information, as the mobile part of the system transmits to the fixed part of the system, indication of transmission quality from base station to the mobile station.

7.7 As per Claim 19, **BA** and **LS** teach the system of Claim 18, as discussed above. **BA** does not teach that the quality measurement for transmission is evaluated by the mobile part of the radio network system, based on frames received from the fixed part of the radio network system. **LS** teaches that the quality measurement for transmission is evaluated by the mobile part of the radio network system, based on frames received from the fixed part of the radio network system (Col 7, Lines 44-46), as the quality information can then be sent to the fixed part for modifying the coding mode (Col 7, Lines 33-38). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **LS** that made the quality measurement for transmission by the mobile part of the radio network system, based on frames received from the fixed part of the radio network system, as the quality information could then be sent to the fixed part for modifying the coding mode.

8. Claims 5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Balachandran et al. (BA)** (US Patent 5,881,105), in view of **Dahlin (DA)** (US Patent 5,199,031).

8.1 As per Claim 5, **BA** teaches the method of Claim 1, as discussed above. **BA** does not teach that the inserted bit sequence of signaling information related to another frame is channel coded separately. **DA** teaches that the inserted bit sequence of signaling information related to another frame is channel coded separately (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the method of **BA** with the method of **DA,** so that the inserted bit sequence of signaling information related to another frame is channel coded separately, as that would allow manipulating the incoming data to carry out error detection and correction.

8.2 As per Claim 11, **BA** teaches a frame based transmission system for signaling of information, whereat the signaling information contains information necessary for the operation of the transmission system, having means for coding and decoding of data, means for handling, the coded data in frame format, and means for transmitting and receiving the frames (Fig. 1; Col 3, Lines 34-66; Col 1, Line 65 to Col 2, Line 24); characterized by

means for partitioning a bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information inserted into and from a plurality of frames (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); the FACCH

carries the control signals which are 184 bits; the FACCH signals become 456 bits long after encoding; these are split into 8 bursts and sent through 8 separate frames; the FACCH carries the control signals in frames in which the user data/speech for the same user is not carried (Col 2, Lines 45-66); and

means for inserting and evaluating the bit sequence of signaling information (12;22) into and from another frame, wherein the bit sequence is related to the another frame (Col 3, Lines 45-47 and Col 3, lines 60-66); the synchronization word inserted in each slot is related to that slot and to that frame and provides for frame synchronization.

BA does not teach that means for channel coding and decoding are used to channel code and decode the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from another frame. **DA** teaches that means for channel coding and decoding are used to channel code and decode the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from another frame (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **DA,** so that means for channel coding and decoding were used to channel code and decode the bit sequence of signaling information provided by the means for inserting and evaluating the bit sequence of signaling information into and from another frame, as that would facilitate manipulating the incoming data to carry out error detection and correction.

8.3 As per Claim 12, **BA** teaches the system of Claim 9, as discussed above. **BA** does not teach that the means for channel coding (11;21) are used to channel code and decode the different bits of the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames. **DA** teaches that the means for channel coding (11;21) are used to channel code and decode the different bits of the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the system of **BA** with the system of **DA,** so that the means for channel coding (11;21) are used to channel code and decode the different bits of the partitioned bit sequence of signaling information provided by the means for partitioning the bit sequence of signaling information (12;22) and inserting and evaluating different bits of the partitioned bit sequence of information into and from a plurality of frames, as that would facilitate manipulating the incoming data to carry out error detection and correction.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Balachandran et al. (BA)** (US Patent 5,881,105), in view of **Dahlin (DA)** (US Patent 5,199,031), and further in view of **Alanara (AL)** (US Patent 6,286,122).

9.1 As per Claim 6, **BA** teaches the method of Claim 1, as discussed above. **BA** does not teach that that the different bits of the partitioned bit sequence of signaling information inserted into a plurality of frames are channel coded together with data contained in the plurality of frames. **AL** teaches that the data word and signal word could be interleaved and sent in one slot (Col 4, Lines 22-27), so unused portion of a slot containing signaling word could be used to transmit data word (Col 4, Lines 22-27). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the method of **BA** with the method of **AL**, so that the data word and signal word could be interleaved and sent in one slot, as that would facilitate using unused portion of a slot containing signaling word to transmit data word.

DA teaches that the different bits of the partitioned bit sequence of signaling information inserted into a plurality of frames are channel coded together with data contained in the plurality of frames (Fig. 2, Items 102 and 104; Col 4, Lines 14-35), as that allows manipulating the incoming data to carry out error detection and correction (Col 4, Lines 25-29). It would have been obvious to one of ordinary skill in the art at the time of the Applicants' invention to modify the method of **BA** and **AL** with the method of **DA**, so that the different bits of the partitioned bit sequence of signaling information inserted into a plurality of frames are channel coded together with data contained in the plurality of frames, as that would facilitate manipulating the incoming data to carry out error detection and correction.

Arguments

10.1 As per the applicants' argument that "Balachandran also describes interleaving control signals in the FACCH (column 4, lines 3 to 11). However, there is no suggestion in Balachandran that ***the same signalling information*** should he inserted both into the frames to which it relates and into other frames, as recited in the claims of the present application and as shown in figure 2. On the contrary, column 3, lines 45 to 47 describes the insertion of synchronising bits into a transmission burst and column 4, lines 3 to 11 describes the interleaving of control signals in the FACCH, and there is no suggestion that these control signals include the synchronising hits. Thus, the partitioning and inserting step and the inserting step of claim 1 are only disclosed in Balachandran in respect of ***different signalling information***. Moreover, there is no suggestion in Balachandran that the two steps should be carried out in respect of ***the same signalling information***. It is therefore submitted that claim 1 and corresponding system claim 9 of the present application are novel and inventive over Balachandran", the examiner takes the position that the partitioned signaling information sent in a plurality of frames and the signaling information sent in another frame by the applicants are not same, but are different. The signaling information sent in another frame is the current coding mode, while the partitioned signaling information sent in a plurality of frames is either future coding mode or quality information.

10.2 As per the applicants' argument that "Le Strat describes a coding mode sent through the FACCH. However, as in Balachandran, there is no suggestion in Le Strat that the coding mode, or indeed any signalling information, should he transmitted in two ways and, in particular, the two ways specified in claims 1

and 3", the examiner respectfully disagrees. **LS** teaches that the bit sequence of signaling information and the partitioned bit sequence of signaling information indicate a coding mode used for coding and decoding data in the transmission system (Fig. 9; Col 7, Lines 40-42 and Col 14, Lines 60-63).

10.3 As per the applicants' argument that "neither Balachandran et al. or Balachandran et al. in view of Le Strat disclose or suggest partitioning a bit sequence of signaling information that relates to an individual frame and inserting and evaluating this bit sequence of information into and frames other than the individual frame", the examiner respectfully disagrees.

BA teaches partitioning a bit sequence of signaling information and inserting different bits of the partitioned bit sequence of signaling information into a plurality of frames (Col 4, Lines 3-11 and Col 3, lines 60-66; Col 2, Lines 45-66); and

inserting the bit sequence of signaling information into another frame, wherein the bit sequence is related to the another frame (Col 3, Lines 45-47 and Col 3, lines 60-66).

10.4 As per the applicants' argument that "the applicants reiterate their position that the bit sequence transmitted in an individual frame to which the bit sequence relates (e.g. a code word, shown in column 2 of Fig. 2) is ***the same*** as the bit sequence that is partitioned and transmitted in other frames (e.g. a mode command relating to a subsequent frame, shown in column 3 of Fig. 2). What is *denoted* by the bit sequence and the partitioned hit sequence is not specified in the claims currently on file. Thus, the Examiner's implicit suggestion that the fact that an actual coding mode and a future coding mode cannot be ***the same*** is not understood. In the specific

embodiment shown in Fig. 2, the future coding mode (110 transmitted in frames 0 to 2 (column 3) comprises the same sequence of bits as the actual coding mode used in frames 3 to 5 (column 2). It is in this sense that the applicants consider that the future coding mode (partitioned and transmitted in other frames) and the actual coding mode (transmitted in a frame to which it relates) are ***the same***", the examiner takes the position that the partitioned signaling information sent in a plurality of frames and the signaling information sent in another frame by the applicants are not same, but are different. The signaling information sent in another frame is the current coding mode, while the partitioned signaling information sent in a plurality of frames is either future coding mode or quality information.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
May 22, 2004

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER